

THE LEISURE HOUR.

A FAMILY JOURNAL OF INSTRUCTION AND RECREATION.

No. 214.

THURSDAY, JANUARY 31, 1856.

{ PRICE 1d.
{ STAMPED, 2d.



THE TRIAL OF WILSON, THE ENGLISH MECHANIC.

THE ENGLISHMAN IN RUSSIA. A TALE OF THE TIME OF CATHERINE II.

CHAPTER IX.—THE PRISONER.

It is our business to precede the philanthropist and Penrhyn Clifford to the fortress of St. Petersburg, which, be it understood, is one of the city prisons. Not with the outside of the gloomy building, however, have we any concern, but with one narrow cell in its interior, into which a few straggling beams of light from a small, closely-

burg, which, be it understood, is one of the city prisons. Not with the outside of the gloomy building, however, have we any concern, but with one narrow cell in its interior, into which a few straggling beams of light from a small, closely-

barred aperture in the thick wall, some eight or nine feet above the stone floor, condescend to enter.

A thick stone bench, a hard mattress, a coarse rug, a stone pitcher containing water, complete the furniture of the cell, as far as can be seen in its dim twilight, though the time is noon and the sun is shining brightly outside the fortress.

Seated on the stone bench is a prisoner. Looking at him in that imperfect light, you see that he is coarsely clad; that his garments are stained and dirty, carelessly put on also; and that they are of an evidently outlandish cut and material; to wit, trowsers of coarse canvas, a cloth waistcoat, once blue, unbuttoned and disclosing a shirt which, if clean, would prove to be of blue check; a loose kerchief round the prisoner's neck, tied in a seaman's knot, retaining its original hue, being of black silk, but its brilliancy having long departed; a woollen jacket of light loose texture, still very dirty, completing the costume; save that the prisoner's feet are encased in shoes of stout leather, with the heels of which he is impatiently, and, as one may say, almost savagely, kicking the pavement.

The man's countenance—as much as you can see of it through the obscurity of that dark cell—is haggard and downcast; it is encumbered with a beard of some weeks' growth, rough and ragged, though the hair of the head is smooth, and appears lately to have been carefully combed. The man's skin is clean, too, though his clothes are dirty.

Hush! he raises himself and listens. The door of the cell is unlocked, and a soldier enters with a basin of oleaginous liquid and a lump of black bread, which he silently places on the stone bench.

The prisoner utters an impatient "Pish!" and gives himself an angry shake.

"I say, you! hillo, there!" he cries, as the soldier is walking away.

The man turns at the sound of the voice, and stands still.

"I want to know how long I am to be kept here," shouts the Englishman—for the prisoner is an Englishman. "Here I have been cooped-up in this filthy den six weeks; I want to know what for, and when I am to be brought to trial; do you hear?"

The soldier must be very deaf if he does not hear. He listens also, with a grim smile, shakes his head, walks slowly away, and locks the door on the prisoner, who walks up and down, and to and fro, in his narrow cell, considerably chafed.

The mood does not last long, however; the prisoner shakes himself again—not irritably this time—and then seats himself composedly on his stone bench, and, cutting his black bread into slices, dips it into the basin of soup, first of all bending over it and saying in an humble tone, "For what we are about to receive, the Lord make us truly thankful."

"My mother taught me to say that," he says to himself; "and a very good prayer it is; and I always think of her when I say it; poor dear mother! I wonder what she would think of her boy Alick, to see him clapped in between four stone walls in this fashion."

So saying, he proceeds slowly to the business before him, lingering over it with a kind of fond

and regretful dalliance, it being one of his most serious occupations in his waking hours. Another is that of carving with his knife, on the stone wall of his cell, the representation of an English frigate afloat. He has got as high as the cross-trees.

"After all," he communes with himself, when he has reached the bottom of his basin, and his last mouthful of crust, "it isn't as bad as it might be. They won't try to keep me here all my life, like Baron Trenck, I reckon; and when it comes to trial, they can't make a case out against me, any how, I should think: and I know that I have been in worse danger than this. If I could only get somebody to talk to, that I could make understand, instead of these —"

At this moment the door is again unlocked, and in company with the soldier enter two gentlemen, one elderly and the other young.

The prisoner starts from his bench, and looks curiously at his visitors. He is used to the gloom of his cell, and can see their features plainly, while they can only discern his outline.

"Mr. Clifford!" exclaims the prisoner, in a voice of joy and gladness. "Only to think, sir; it is just as if you had heard what I have just been saying to myself."

"You know my name," said the young man, surprised; "and I seem to remember your voice; but—but—"

"And the 'Mary Ann,' Mr. Clifford, and the storm, and the spirit casks, and the axe, and all that, Mr. Clifford?"

"You don't mean — let me look at you. What! Wilson? Why, I never thought to find you here," shaking hands with the prisoner while he speaks: "you said you would call on me at my uncle's: why didn't you, Wilson? and what have you been doing to get into this trouble?"

"Nothing to be ashamed of, Mr. Clifford," says the prisoner, composedly; "but appearances are against me, I own; as to not calling on you, sir, I should have done it may-be, if I had had time; but I hadn't been a day in St. Petersburg before here I was, and here I am."

"But what was it for, Wilson?"

Whereupon, Wilson tells his visitors what it was for. Thus:—But we shall tell the story in our own words.

CHAPTER X.

NOW ALEXANDER WILSON FOUND HIS WAY INTO PRISON.

On the day following that in which Penrhyn Clifford first entered his uncle's house, Wilson landed at St. Petersburg. His appearance attracted no attention; he was clad in the same dress which he had worn on board the "Mary Ann," for his scanty luggage, like that of Clifford, had been lost in the wreck. His small stock of money was safe, however, in his pocket; and as he had neither uncle, friend, nor acquaintance in St. Petersburg, he loitered on the quay, looking quietly on the scene before him.

At length he disappeared; and a few hours afterwards, he had sought a harbour of temporary rest in a house frequented by English and other sailors, in the straggling street of a low suburb, the name of which is immaterial to our story.

It was a bright moonlight night; and at no time is St. Petersburg more beautiful. "The

peculiar twilight of those latitudes," says a writer, "casts a softness, yet a clearness over the scene, of which those who have not witnessed it can form no idea: the utter silence of a great city in what seems broad daylight, gives a mysterious feeling to the heart, and subdues the thoughts. I was never more struck with the beauty of St. Petersburg," she adds, "than once, when, on returning from a party at a late hour, I was crossing the upper bridge from Kamanoi Oustroff; the long line of palaces fading away in the distance, the magnificent quays, the calm river, the unbroken stillness, all produced the effect of a fairy scene, as if they were fabrics of a vision too lovely to be real, erected on the shores of a lake of liquid silver."

Every pleasant picture has its contrast. If St. Petersburg has its splendid palaces, it has its hovels also, even as Penrhyn Clifford had discovered; and in juxtaposition with the pure and lovely moonlight, and calm cool atmosphere of a summer night, may be placed the reeking filthiness of a miserable *cabak*, or tavern, crowded with roysterers, and dimly lighted with lamps fed with putrescent oil.

Into such a den as this, Wilson had entered; and though, from habits and associations, probably not over-fastidious, he looked with disgust on the scene. We have said that the house was a resort of foreign sailors; but this was not to the exclusion of natives of the lowest class, whose matted beards and sheepskin garments—from which latter emanated a stench so sickening that the newly arrived voyager instinctively drew back when one approached him—added to the grotesqueness and, we must also say, to the repulsiveness of the assembled groups.

Fumes of strong and rank tobacco mingled with the other abominations which reached and almost overpowered the senses of the traveller; and, looking around him, he was not slow to perceive that almost all besides himself, within the circle of his vision, were imbibing deep draughts of a muddy, thick liquid, which they called *quass*, and fiery potations under the name of *vodka*, till they were rapidly emerging into either noisy and quarrelsome, or simpering and maudlin intoxication. Some, indeed, had already sunk from the benches to the floor, in a state of insensibility. These were mostly native Russians, who, scorning the slower gradations of drunkenness, quaffed off at a draught, and in huge bumpers, the poisonous raw spirit, which had the effect of reducing them at once to helplessness of body and imbecility of mind.

Both heart and stomach-sick with what he witnessed, Wilson, with some difficulty, detached himself from the throng and tumult, and demanded of the landlord—a Swede, who spoke in broken English, as well as in many other languages, after the same sort—to be shown to his resting-place.

"Follow me," said the man, taking up a lamp and staggering onward through a long passage.

The Englishman followed, and, taking the lamp in his own hand, pushed open a door to which his conductor had pointed. The room was utterly devoid of furniture, but not of occupants. Holding his flickering light aloft, and penetrating the gloom of the chamber, Wilson perceived with dismay that the triply black and dirty floor was

thickly crowded with what he was fain to believe were human beings; but they had little appearance of humanity, as they lay rolled up in every possible variety of attitude. They were mostly in a state of profound slumber, as a deafening noise of prolonged and heavy snores, or shorter and yet more violent snorts, sufficiently testified. They reclined, some of them pillowed on their nearest fellows, some of them leaning against the bare walls, from which descended streams of impure, condensed vapour; while, horror of horrors! the dark walls themselves seemed instinct with active, struggling, bloated, and ferocious insect life.

The Englishman did not wait to see more. "The hard pavement—the streets—rather than this!" he mentally ejaculated, thrusting back the lamp into the landlord's hands; and then, rushing distractedly from the wretched *cabak*, gasping and panting for a full breath of vital air, he found himself in the open street, at midnight, and did not stop in his flight until he considered himself at a safe distance from the horrid den.

There was not much romance in Wilson's composition: the hard daily labours of the every-day world is a dire extinguisher of those finer sympathies with nature and art which gather sustenance from moon-beams, silver lakes, murmuring streams, shady groves, and classic temples. He would at that time, I dare say, have preferred a snug and comfortable resting-place for his weary head, to the finest moonlit scene in the world. Nevertheless, he was thankful to have exchanged the complicated horrors and possible dangers of the suburban tavern—into which he had unwarily entered on the recommendation of an English sailor whom he had accidentally encountered—for the free air of the now deserted streets.

It was too late for the wanderer to attempt finding another lodging, even though he had known where to look for it. He strolled on, therefore, towards the quay where he had landed, grateful at any rate for the clear moonlight and the pleasant balmy air, and hoping that, among the vessels which were moored alongside the quay, he might find that from which he had landed, and so obtain a temporary shelter till morning. But the adventures of Wilson's first night in St. Petersburg were not ended.

He had just reached the quay, and—romanceless as he undoubtedly was—was gazing with some interest on the placid water, when a human voice, as of one in terror or distress, broke the stillness of the night. The shriek—for the sound amounted to that—manifestly came from the river.

Hastily glancing across the stream, he saw, at no great distance from the shore, a boat in which two or more men were violently struggling. In another moment, the cry which had startled him was repeated, though more faintly; then, a sudden plunge was heard, and so bright was the moonlight that he saw a heavy body floating down the stream, while the boat was propelled in the opposite direction by the strong arms of two rowers.

Wilson did not wait to hear or see more. To throw off his upper garment and divest himself of his heavy shoes was the action of a moment, and, the next instant, he was swimming towards the drowning man.

The Englishman was strong-limbed, well-

breathed, and an excellent swimmer; and it was with no particular difficulty that he reached the man, whose garments had buoyed him up for the time; and in a comparatively short space he had dragged him to shore.

The man was dead: he had been wounded by his assailant. The cry Wilson had heard from his lips was his death-cry.

If Alexander Wilson had been many weeks, or even days, older in Russia than he was, he might perhaps have consulted his own safety, by retreating as speedily as possible from the spot. But, being inexperienced in affairs of this nature, he raised an alarm, and repeated it so lustily and energetically that it at length attracted the notice of the nearest watchman, who, guided by the voice, reached the spot just as the humane Englishman was re-examining the body of the murdered man, to discover if any life yet remained.

To Wilson's unbounded astonishment, the watchman had no sooner made his appearance than, with violent gesticulations, he laid hands on him, and commenced roughly dragging him away. The man's words, Wilson could not of course understand; but it was easy to interpret his actions:—the Englishman was a prisoner.

He broke from the watchman's grasp, however, and endeavoured to explain by signs: he pointed to the corpse at his feet, then to the river, then to his own saturated garments—seeking to make the man understand how he had risked his own life to save that of the unfortunate murdered wretch.

By this time another watchman had arrived at the spot, and a few stragglers had gathered round, probably from the barges and luggers which lined the quay; and, to Wilson's relief, he heard the sound of an Englishman's voice.

"Some one here speaks English," he exclaimed. "I am an Englishman; in pity, help me make these fellows understand what they are doing."

"I reckon they know that, mate, without our telling them," said a sailor, stepping forward, rather unwillingly, as it seemed to Wilson.

"No, they do not," said he; and hastily—for the watchmen were impatient, and had taken care to secure him between them—he told his adventure.

"And what had you to do with meddling and making with a dead man?" asked the sailor bluntly. "Don't you know that it is death by law, or something like it, in this country, to be caught alongside of a *corpus*? Why didn't you let him float away quiet?" and the sailor slunk away and disappeared.

Further remonstrance was useless, and, submitting to his fate, after picking up his jacket and shoes, Wilson was hurried to the nearest *sieja*, or watch-house, thrust into a cell, somewhat less revolting than the sleeping apartment from which, not an hour before, he had fled; and at the return of day was, without further examination, conducted by a guard of soldiers to the dreary fortress, the heavy gates of which, as they closed upon him, excluded all communication with the outer world.

"And here I have been six long weeks, Mr. Clifford," said Wilson, "kicking my heels against the floor, and moping myself almost to fiddle-strings."

"Have you been harshly treated?" asked the stranger.

"Harshly, sir!" exclaimed the man, vehemently. "Not very gentle treatment, I think, to shut a man up in jail for doing his best to save another man's life! Put it to yourself, sir; but may be you think, being a gentleman, that there's no great hardship in that, to a man who has got to battle through the world as he can."

"Tut!" said the gentleman—but not unkindly—"how can you fancy anything so absurd, my friend?"

"I didn't know, sir," rejoined Wilson, apologetically; "only that there are those who don't think much of these little trifles when they happen to others; it would make all the difference, perhaps, if it came to their turn; and I could not tell how it might be with you, sir."

"Rightly put, my friend; well, if it is any comfort for you to know it, I also, in my time, have been shut up in a prison in a foreign land, as you are, and therefore can sympathise with you."

The prisoner's eyes brightened. "Thank you kindly for that word, sir," he said.

"And as sympathy is of little use without effort, we will do our best to have your case investigated by the proper authorities," continued Mr. Howard.

"That's the best news I have heard this long time, sir," exclaimed Wilson. "Investigated! that's all I want, sir."

"It shall be done, my good fellow," said Clifford; "my uncle will help you, I am sure. But you will want *this*, perhaps," he whispered; and slipped a coin into the prisoner's hand.

"No, no—many thanks, Mr. Clifford," said the man, putting back the proffered gift. "Let me get out of this place, and I am not afraid."

"You will at any rate call on us when you are out of it," said Clifford, "and let us know how we can help you;" and he pencilled a direction on a card, which Wilson put into his pocket.

While this dialogue was going on, Mr. Howard glanced round the cell.

"You have been amusing yourself, I see," pointing to the graven frigate.

"Yes sir; it keeps me in mind of my trade, at all events."

"And what is that trade?"

"A shipwright," said Wilson.

CHAPTER XI.

JUSTICE.

A FEW days after the interview just related, a close, box-like carriage, of rough construction, halted at one of the entrances of a large and handsome building, not far from the river-side; and, first a soldier, then our friend Wilson, and then another soldier, alighted, and proceeded through divers apartments, having the appearance of guard-rooms, till they reached an office where, seated at a desk, was a person in the ordinary uniform of the police. At a sign from this official, the soldiers retired, and the prisoner remained.

There was nothing particularly inviting in the aspect of the clerk, and Wilson glanced around him with a considerable degree of curiosity, probably not unmingled with dread. And, in truth, though conscious of his innocence, and desirous as

he was of being brought to a fair trial, Wilson was acute enough to perceive that appearances might be turned and twisted against him. He knew that, even in his own country, and with the privilege of an open trial, the advantages of an impartial jury, and the facilities of obtaining witnesses to character, men had been condemned for crimes they had not committed, on the strength of circumstantial evidence. And he had no security against a similar result, with all the disadvantage of being a stranger in the country, and ignorant even of the language of his accusers, as well as of the laws by which he was to be tried.

The sailor whose aid he had invoked when first apprehended, had intimated that it was a crime in Russia to be found meddling with a dead man. This was monstrous; but it might be law notwithstanding. Or, if not, how should he prove that he had no concern in the murder he had witnessed? What if the watchmen who apprehended him were to declare that they saw him commit the deed?

Another circumstance troubled the prisoner. On landing at St. Petersburg, he had, in an inner pocket of his jacket, a pocket-book which he had carried about his person ever since he left England, and which he had therefore saved in the shipwreck. In this pocket-book were several, to him, important documents—his passport, to wit, also the indentures of his former apprenticeship, a testimonial from his last employer in England, and a letter of recommendation to some subordinate official, who happened to be an Englishman, in the dockyard of St. Petersburg. It was not until he was conveyed to the fortress as a prisoner that he missed this pocket-book, which might have fallen from him when he hastily threw off his garment to plunge into the river. At any rate, lost it was, and irretrievably.

Wilson's best hope, therefore, and indeed almost his only one, was that, owing, as he supposed he might, his approaching examination to the efforts of his fellow passenger Clifford, and his companion at the fortress, they would not desert him at the last. This hope eventually became so strong that he plucked up courage, and waited with some degree of composure for what was to come next.

He had not long to wait. A door opened at the farther end of the apartment, and two persons entered, followed by a third, who remained standing by the door.

The principal personage of the two was a man of middle age, and colossal size and stature, in the uniform of a military officer. A good-humoured smile which played about his lips, and corresponded with the mild, open, and almost benevolent glances of his eyes, gave some assurance to the prisoner that he would not be condemned unheard or unjustly. Nevertheless, this man was Alexius Orloff—he respecting whose share in the assassination of Peter, public rumour had, as we have already mentioned, been so busy.

His companion was an interpreter: he took a position between the Count and the prisoner.

"Your name, prisoner?" he demanded, at a nod from the Count, who seated himself at a small table, while the police agent or clerk looked up for a moment, with cold, glassy eye, and a calm

inflexible countenance, from which human sympathy seemed to have been long banished.

"Alexander Wilson."

"Of what country?"—he was told. "How long have you been in Russia?"—he was told.

"What induced you to come to Russia?"

Wilson looked down on his coarse stained garments, glanced at his hard, embrowned hands, and then, looking up again, answered firmly: "It was an honest motive: I was poor, and could not get such work as I wanted at home. I was told that I could get it out here; and I came to look for it."

The interrogator listened, and in his quality of interpreter repeated as much of the reply as renewed the smile on Count Orloff's lips. As to the grim man at the desk, he did not look as though he had ever smiled.

The examination went on—the interpretation likewise, answer by answer.

"What is your employment?"—he was told.

"What papers have you to prove your statement?"

"None," said the prisoner; "they were lost on the night when I was put in prison."

The officer at the table looked significantly at the man at the desk. "*Pashóle*—go on," he said to the questioner.

"What were those papers?"—he was told: "Passport, indenture, testimonial, letter of introduction."

"Whom do you know in St. Petersburg?"—he was told: "No one besides Mr. Clifford, who came out in the same vessel;" and the prisoner produced the card.

"Put it down: that will do. Why were you put in prison?"

"Not for doing any harm," replied the prisoner bluntly. "If there's anything against me, let me know what it is."

The Count smiled again when this reply was interpreted; and the man at the desk looked sterner than before.

"*Pashóle*," repeated the Count, and added a few words in Russ.

"This is no answer," said the interpreter to the prisoner. "What happened on that night of which you speak?"

"That's a different thing," said Wilson: "I tried to save a man from drowning."

"And did you save him?"

"No; he was dead, or seemed to be; he had been stabbed."

"Did you see the crime committed?"

"I saw a struggle, but not the blow given."

"Should you know the man with whom the deceased was struggling, if you were to see him now?"

"No; the deed was committed in a boat, some distance from the shore. I should not like to swear to the man, though I saw his outline in the bright moonlight."

The questioner paused here; and the Count beckoned to the official at the door, who came forward.

"You will accompany that man," said the interpreter. "You need not fear," he added, seeing the prisoner hesitate; and Wilson, though with a sinking heart, obeyed.

The man conducted the prisoner through a long passage; they then descended a flight of stone stairs. The air, as they went on, felt chill and damp; and the walls, where they could be seen, were green and slimy with moisture. Presently they reached a landing-place; and the conductor struck a light, which he applied to a lamp.

Still farther, onwards and downwards, silently.

At length they reached a heavy door, which, being unlocked by the guide, opened into a gloomy vault, damp and aguish. Water stood on its walls, and glistened in the light of the lamp. The floor was slippery with moisture.

There was a heap of straw in one corner of the vault, and stretched on it was a human form, partly covered with a rug.

The soldier—for the guide was a soldier—held the lamp close above the recumbent object, and Wilson looked down, wonderingly first, then shudderingly.

Shudderingly; for it was a ghastly sight. The man lay on his side, his head resting on his arm; and his body, partially uncovered, seemed one horrible, swollen, livid, deep-seated and incurable wound, while the straw beneath him was sodden with blood. The man was breathing hard and laboriously, else there was no appearance of life, for he did not move, though the lamp was passed to and fro above his head. His eyes were half closed and dull and filmy; his cheeks, pale and bloodless; his hair, matted and foul; his beard, long and tangled; and his thin parched lips, parted in his efforts in gasping for air, disclosed a swollen lacerated tongue, and a row of teeth, white but dry; all moisture seemed absorbed.

Wilson turned away, faint and sickened at the sight: apparently, however, the poor wretch was expected to live; at least, provision had been made for his sustenance, for within reach of his hand was a pitcher of water, and bread.

Silently the saddened spectator was reconducted to upper light and air, and once more stood before his interrogators; and his examination was resumed.

"Do you know the man whom you have just seen?"

"No."

"It is no matter; *he* is the criminal."

Wilson bowed, and was silent. Meanwhile, the judge—as we may term Count Orloff—spoke in a low tone to the interpreter, who presently spoke again.

"You are free. Justice in Russia does not sleep; and punishment has fallen on the guilty. You seek employment in Her Majesty's service?"

"I came to seek it; but if Her Majesty would permit me to return to England," he faltered.

"Why?"

"I have been imprisoned unjustly."

Count Orloff again smiled, when the reply was repeated. The man at the desk grinned derisively under his thin moustache.

"Prut! the guilty is punished; and you will be wiser than to thrust yourself into a midnight brawl another time. You are free."

The Englishman bowed again, and wondered what was coming next; for it seemed that his examiners had not done with him.

The man at the desk handed a pocket-book to

the interpreter, who asked—"Do you know this?"

"Yes I do; it is mine," said Wilson.

"You will see if your papers are right."

Wilson looked over the contents of his pocket-book; all was there.

"It is yours; you may retain it." Another communication from the great man: "Her Majesty is sorry for your misfortune, and graciously offers you a recompence. You are appointed to a position of trust in Her Majesty's dock-yard. Be faithful."

The shipwright stammered his acknowledgments.

"You are to present yourself here to-morrow at one o'clock: his Excellency will give you an audience. Provide yourself with more suitable clothing; here is money: no thanks; Her Majesty is just and generous. You are free: a carriage waits to convey you to your friend, the English merchant. Adieu."

The investigation was over: the man at the desk went on writing, unmoved; the Count rose and left the room, the interpreter followed; and two minutes afterwards our astounded shipwright, seated in a droski, was being driven rapidly across the Admiralty Square.

THE BOTANY OF COAL.

SECOND PAPER.

WE have traced the origin of coal to the primeval forests or swamps of our globe: another question remains: how came it what it is, and where it is? Perhaps a little light may be thrown upon this point by analogy. Some of the physical phenomena of our globe present points of resemblance worthy of note. In the great rivers of North America, vast quantities of timber and plants, torn from their native forests by land-floods or other means, are continually being drifted down their streams till they become water-logged and sink. It being only the air contained in the pores of the wood that enables it to float, it is easy to understand that long soaking in water will repel it, and the wood, being thus rendered heavier than water, sinks. If great pressure be applied at the same time, this effect is produced very speedily. Captain Scoresby relates a remarkable instance of this in the narrative of his voyages to the arctic regions. A whale, on being harpooned, ran out all the line in the boat, and as the end of the rope was made fast, the boat was dragged by the fish under water to the depth, as was supposed, of several thousand feet, the men having just had time to make their escape by leaping on a piece of ice. When the whale returned to the surface to breathe, it was killed; but instead of floating, it began to sink as soon as it was dead, in consequence of the weight of the boat, which was still attached to it by the line of the first harpoon remaining in its flesh. The sunken boat was raised with great difficulty, for so heavy was it, that although before the accident it would have been buoyant when full of water, it now required a boat at each end to keep it from sinking. When they had got it into the ship, the oaken planks

were, Captain Scoresby says, "as completely soaked in every pore as if they had lain at the bottom of the sea since the flood." A piece of light fir wood, about fifteen inches square, that had gone down with the boat, when thrown into the water again, sank like a stone.

When timber is floated down a river, it is often arrested by a lake; or if the river descends to the sea, the voyage of the drift-wood will probably be arrested at its mouth, in consequence of the opposition of the tide and river current, and will be deposited in the strata which every river is accumulating, as it reaches the ocean. In North America, we have examples of vast deposits of timber under both these circumstances. In Slave Lake, the quantity of drift timber annually brought down is enormous. "As the trees," says Dr. Richardson, "retain their roots, which are often loaded with earth and stones, they readily sink, especially when water-soaked, and, accumulating in the eddies, form shoals, which augment into islands." Slave Lake, indeed, must ultimately be filled up by the matters conveyed into it from the river. Vast quantities of drift timber are daily buried under the sand at the mouth of the river, and enormous piles of it are accumulated on the shores of every part of the lake. The same operation is going on in Athabasca Lake, where a shoal of many miles in extent has been formed by the drift timber and vegetable *débris* brought down by the Elk River. In the Mississippi, vast rafts, composed of trees held together by the interlacing of smaller twigs, which have been washed from the banks by the main stream, are floated down into the Gulf of Mexico, bearing upon them a luxuriant covering of plants. The magnitude which some of these rafts attain by accumulation, while they are temporarily arrested in their progress to the sea, is truly astonishing. An obstruction of this sort in the Atchafalaya, one of the outlets of the Mississippi, in the lower part of its delta, produced a raft, ten miles in length, 220 yards wide, and eight feet deep. It rose and fell with the water during the changes of flood and drought, and, though floating, its surface was covered with a variety of living plants. In some places, where the shoals which these accumulations of alternate drift-wood and mud or sand had formed, have been cut through by the action of the current, it may be seen that the wood has become converted into a dark and brittle substance, resembling coal in the lowest beds, and has completely lost its fibrous structure; while the various grades of this change may be observed as the upper beds are approached, containing the wood in its more recent state. The banks of the Mackenzie River display almost everywhere horizontal beds of wood partially carbonized, alternating with bituminous clay, gravel, sand, and friable sandstone: sections, in fact, of such deposits as are now forming at the bottom of the lake it traverses, and presenting an exact counterpart to the series of strata we have already mentioned as occurring in the actual coal mines. The lower beds of this carbonized wood are very similar to the *lignite*, or imperfect coal, found in the strata of the Isle of Wight, Dorsetshire, etc. A similar change can be observed in the peat-bogs of England and Ireland, where the deeper portions of the peat may be seen

converted into a firm, black, carbonaceous substance, which it requires no great stretch of the imagination to suppose will ultimately become coal. Numerous observations and experiments have established the fact beyond doubt, that the action of water upon wood or peat, submerged so deeply as to be beyond the reach of atmospheric influence, is sufficient to convert them into black, brittle, bituminous substances; and if this process were carried on under great pressure, such as would result from the weight of thick overlying strata, all the conditions necessary for the production of coal would probably be fulfilled, though a long period might be consumed ere the change was perfected.

Having seen that coal is really vegetable in its origin, and having traced the means by which the forests of an ancient era became converted into that substance, we must now inquire how it has been placed where we find it—in the interior of the country, and raised far above the level of rivers, lakes, or seas. We may premise that at least two distinct processes have been concerned in the production of the coal-fields of this country—traces of the different action of each being found in various spots. One of these processes was probably closely analogous to that which we have described as taking place in America at the present day, viz., the accumulation in estuaries or lakes of vast quantities of drift wood, periodically borne there, and alternating with deposits of mud, sand, etc. This explanation will not, however, apply in all cases; for it seems evident that some coal-fields have been formed in a more tranquil mode, and nearly, if not precisely, on the spot where the vegetation flourished, as is plain from the fact we have mentioned, that the trees in some collieries are still in an erect position. It has therefore been supposed, that in such cases the plants passed into the condition of a peat moss, or that the decaying and decayed trunks of the forest gradually composed a deep layer of vegetable substances, while other and younger trees continued the process, and gave birth to fresh accumulations of matter; that then the land on which they grew subsided below the level of the waters (as has often been the case in modern times), and the sea covered the vegetable deposit with a layer of sand or mud—perhaps various layers in succession: that by slow upheaval it became again dry land, to be again covered with a luxuriant plumage of trees and plants, which, being in their turn submerged, and pressed down under the accumulated weight of succeeding deposits, became at length what we now find it—coal. The repeated alternation of upheavals and depressions, such as we have now described, seems to afford the only satisfactory explanation of the true means by which many of the coal-fields have been formed. That such repeated changes of level did actually take place, the coal-fields themselves afford evidence; and we have many parallel instances in modern times. To cite only one.

On the shores of the Bay of Baiae, about five miles from Naples, stands a Roman temple, formerly dedicated to Jupiter Serapis. In the early part of the Christian era, this temple, by the sinking of the coast, became buried beneath the waves. In 1538, the coast was upraised, and with it the tem-

ple, which was now high and dry, bearing evident marks of the changes it had seen; at the present time that same shore is slowly sinking again, and the temple is within so short a distance of the waves, that there can be but little doubt that it will undergo a second submersion. Strange as it may seem to the dwellers in our quiet isle, such fluctuations in the level of the land are no uncommon occurrence even in modern days. A very large part of the continent of South America is subject to these mutations: some portions of the coast have been uplifted seventy feet at once; and the grand and lofty chain of the Andes has probably been raised to its proud elevation in (geologically speaking) modern times. In past ages, such revolutions were universal. The sea asserted its supremacy where land existed and forests flourished, and the bottom of the sea became uplifted and appeared as dry land. And so active were the mysterious but potent agencies which are and have been at work in the interior of our globe, and by which these wonderful elevations and depressions have been effected, that these movements have been frequently repeated in alternate order. Not that it is to be supposed that alterations of the level have been always convulsive and sudden. Sometimes, undoubtedly, they have been so; but more frequently they were slow, gradual, and continued through long periods of time; just as some parts of Sweden and Norway are, and have been for hundreds of years, rising steadily at the very slow rate of a few feet in a century. By a like process have the coal beds not only assumed their form of many and variously repeated strata, but have been finally uplifted to their present position on dry land, where they stand as an enduring monument of His providence who "crowns us with loving-kindness and tender mercies," and exemplify most strikingly how He can overrule the most mighty elements of destruction for the happiness and well-being of His creatures.

HOW MACAULAY'S "HISTORY" WAS BOUND.

THE revolution which, within the last fifteen or twenty years, has taken place in the art and mystery of bookbinding, must be apparent to every one who, for so long a period, has been a lover of books. Those of us who are approaching the term of middle life, must recollect perfectly well the disagreeable and slatternly guise in which, a score of years back, nearly every new publication issued from the press. If a pamphlet, it was "stabbed" and stitched, sometimes with blue covers and sometimes without; if a volume, it was boarded and covered with blue paper, a buff back, and a white printed lettering-piece; the edges were left ragged and rough, and when placed on the shelf became traps for dust, which settled on them till the book was not fit to be seen, and had to be sent to the binders for a coat of calf-skin. Now we have changed all that. Our cheaper volumes come forth in shape compact and trim, and for the most part worthy to rank as ornaments to the library, if not for the drawing-room table. This is owing almost entirely to the

invention—for it is nothing less—of the system of cloth binding, which is peculiar to this country and to America, which derived it from us. It had its origin, if we mistake not, in the palmy days of the *Annals*, which have now nearly all disappeared. These bibliographic luxuries were bound in silk and satin, to suit the taste of the wealthy; and the experiments made in binding with those materials led to imitations in cotton cloth, which, from their usefulness and cheapness, eventually supplanted the old system, and gave rise to a new branch of trade, which subsequent competition has rendered remarkably beneficial to the public. Paper, as the cover of a book of any pretensions, is now no longer thought of; and, to a very large extent, cloth has superseded leather, than which it is much cheaper.

A paragraph in the "Publishers' Circular" for December, 1855, informing us that Macaulay's two new volumes were undergoing the process of cloth binding at the Messrs. Westleys' establishment, where they were being finished out of hand at the rate of six thousand volumes a day, induced us, with the polite acquiescence of the proprietors, to witness as much of the process as was necessary for understanding the whole, and to report upon it for the information of our readers. The book-binder's art ranks deservedly high; in many respects it takes precedence of a mere mechanical branch of industry, and, as we shall have occasion to show, affords scope for talent of no mean order. We shall, with the reader's permission, briefly trace the career of one of Mr. Macaulay's volumes under the hands of the binder, and then proceed, on a future day, to say something further of the higher departments of the binder's skill.

Upon entering the building, which resembles a factory six stories high, we find ourselves surrounded by Thomas Babington Macaulay, Esq., in every shape that a book can assume, from the flying sheet to the compact volume, and all the intermediate phases of the transformation. Already, at the time of our visit, ten thousand of the volumes had left the premises for the Row, and thousands more, in stacks as big as hayricks, were waiting for removal.

As a general rule, the binder receives the sheets from the printer already "gathered," that is, arranged in consecutive order, so that when folded the pages of the volume shall follow each other seriatim from the beginning to the end. Folding is, therefore, the binder's first process. If the reader takes a sheet of the "*Leisure Hour*," and, before he cuts it open, unfolds it flat on his table, he will see that the pages on each side of it are all arranged arbitrarily; he will see the first close to the sixteenth, the second close to the fourteenth, and so on: this mode of printing the pages is necessary, in order that they may come in their proper places when the sheet is folded. The folding is all performed by females, of whom there are some hundred and fifty at work at the present moment in the house. If you watch her operations, you will see that the folder doubles the sheet towards her, strikes the fold with her paper-knife, doubles it again, again strikes the fold, and repeating the ceremony once more, lays the sheet on those already folded. The operation seems the easiest thing imaginable; but it is not so easy as



BINDING MACAULAY'S "HISTORY."

it seems, because the folder is not guided by the sheet of paper she folds, but by the pages upon it, and must bring these uniformly upon the squares of each other, or incur the penalty of bad work. When, on opening a book, you observe that one page overtops its opposite neighbour, or that the print seems cast awry on the leaf, you may be sure that the fault is with the folder. A folder gets through some thousands of octavo sheets in a day, and earns from nine to fifteen shillings a week. If you climb to the top of the house, you may see some scores of them at work together in a room by themselves.

Meanwhile, the volume upon which we have our eye is folded. The "collater" now takes it in hand, and in a few seconds runs his eye over the signatures to see that they are complete and in consecutive order. The volume is then, with a batch of its fellows, placed in a hydraulic press, where it remains for a short time subjected to powerful pressure. When released, it is ready for the operation of sewing, as a preliminary to which it receives five cuts across the back with a saw, to the depth of some twentieth of an inch. The sewer, who is also a female, sits in front of the sewing-press, which is merely a simple contrivance for keeping a few lengths of twine at a convenient tension. In this instance she uses three lengths of twine which are long enough to hold, say, six of

the volumes. The three cords are strained at such distances as to match the three central cuts of the saw in the back of the book. She takes the first sheet, lays it flat with the left hand behind the cords, and allows each cord to slip into the indentation made by the saw. Opening the sheet in the middle with her left hand, she inserts the needle in the hole at the top of the page, and, bringing it out on one side of the cord, re-inserts it on the other, doing the same at each cord. When the needle comes out at the fifth hole, she lays on a second sheet, and sews that to the cords in a similar way. After the first two sheets are sewn, two sheets instead of one may be sewn to the strings in each passage of the needle up and down; care being taken to fasten the whole together at each turn. When the volumes are sewn, they are cut from the sewing-press, and the backs of them receive a coating of glue. They are then separated from each other by a knife, which cuts the three cords, of which each volume retains a length only equal to its own thickness. At this stage of the process, the fore-edge and foot of the volume are cut smooth by the descending blade of an engine, which does the work rapidly and completely to the required gauge. The back of the book is then rounded by a few strokes of the hammer; it is next placed between backing boards, which are angular boards contrived to nip it

sharply, and, being lightly screwed in a hand-press, is backed by more strokes of the hammer. This backing business serves two purposes: in the first place it renders the back permanently convex, and of course the fore-edge as permanently concave; and, in the second place, a portion of the back, about the eighth of an inch in this instance, being beaten over the boards, forms a kind of groove for the reception of the cover, for which it is now nearly ready.

It is time, therefore, that we should see how the cover is manufactured. For this first edition of Macaulay's new work, six tons weight of mill-board and 7000 yards of cloth are required—such being the consumption of the 50,000 volumes. On descending to the mill-board room, on the basement floor, we find a workman cutting the Macaulay covers at the rate of some dozen a minute, by means of a machine combining the action of the shears with the precision of a die; cutting them all, in fact, so exactly of a size, that when gathered in masses from the well into which they fall, they range together as evenly as a pack of cards.

Proceeding thence to the cloth-room, which reminds us of a draper's underground warehouse, we find another functionary cutting up the cloth with no less rapidity, (though with less regard to precision, which here is of minor importance,) with a long knife. The cover maker, who works by gauge, taking a piece of the cloth, gives the inner surface a coating of warm glue; he then places a pair of the boards upon it at such a distance from each other, in this case about two inches, as is equal to the thickness of the book. The interstice between the boards forms the back, and this he strengthens by the addition of a strip of stout paper. He now laps over the edges of the cloth, dexterously tucking in the corners with his thumb-nails, and neatly envelopes the boards in their cotton garb. The cover, so soon as it is moderately dry, is ready for ornamentation.

Not many years back, every ornament which a book bore on its cover, whether it were gilt or simply impressed on the surface without gold (termed technically, "blind-tooling") was impressed by the hand of the workman. Now the process is much more rapid. Any device which is designed for the corner of a book, being first engraved in relief on a flat plate of brass, may be impressed on cloth or leather, with or without gold, in an instant of time, by means of the blocking-press. Thus the two plates used for the sides of the present volumes are fastened to the descending armature of the press. The blank cover is laid upon a flat bed beneath, and by force of lever and screw the plate comes down on the cloth with the pressure of many tons, leaving its impress indelibly fixed. To increase the sharpness of the impression, and in a manner burn it in, the apparatus is made hot by jets of gas coming in contact with it. When what we may call the blind tooling is thus impressed, the gilt lettering on the back is done at another press in a similar way, gold leaf being first laid on those parts which receive the lettering, in order that it may be burnt in by the hot types. When the cover is withdrawn, the superfluous gold is wiped off with a rag, and the cover is now ready to unfold the book.

We left our volume backed and almost ready for

its cover. While we have been looking after that, the workman has added the end-papers to the book, and glued a strip of coarse canvas to the back, which overlaps it an inch on each side; and he has added outside the canvas a strip of paper, to prevent the glue from adhering to the cloth back. The volume is now placed in its cover and glued fast to the overlapping coarse canvas; after which all that remains to be done is to paste down the end-papers, and give the volumes a final pressing ere they become quite dry, in the hydraulic press.

In following our courteous guide through the labyrinths of this almost interminable hive, we come at last upon a little chamber, where sits a solitary damsel deep in the inspection of a volume. This chamber, we are informed, is the "imperfect room," or, in other words, the book infirmary, of which the lone lass is constituted matron. It will happen in all binderies, and especially in a house like this, where books are bound at the rate of thousands a day, that on examination certain volumes are found imperfect, or, which is as often the case, pluperfect—either wanting a sheet or having a sheet too much. In either case they find their way back to the bookbinder, who sends them at once to the infirmary, where the matron investigates their disorders and then passes them on to the proper hands to medicate them. Of all the hospitals in London this is the only one which rarely has a fatal case to record.

We end our researches at the infirmary, and passing down, down, and down successive flights of stairs, and through and through high lanes of Macaulay's "History," heaped in blocks ready for the grand delivery on publishing day, take leave of our guide with the firm conviction that, if we succeed in making a fair statement of it, our readers will at least know "how Macaulay was bound."

AN ANECDOTE OF BEETHOVEN.

[FROM THE GERMAN.]

SOME months ago I was at Bonn, the birthplace of Beethoven. I met there an old musician, who had known this illustrious composer intimately; and from him I received the following anecdote.

"You know," said he, "that Beethoven was born in a house in the Rhein Gasse (Rhine-street); but at the time I became acquainted with him he lodged over a humble little shop in the Roemer-platz. He was then very poor, so poor that he only went out to walk at night, because of the dilapidated state of his clothing. Nevertheless, he had a piano, pens, paper, ink, and books; and notwithstanding his privations, he passed some happy moments there. He was not yet deaf, and could at least enjoy the harmony of his own compositions. In later years, even this consolation was denied him.

"One winter evening I called upon him, hoping to persuade him to take a walk, and return with me to supper. I found him sitting at the window, by the moonlight, without fire or candle, his face concealed by his hands, and his whole frame shivering with cold, for it was freezing hard. By slow degrees I drew him from his lethargy, persuaded him to accompany me, and exhorted him to shake off his sadness. He came out with me,

but was dark and despairing on that evening, and refused all consolation.

"I hate the world," said he with passion. "I hate myself. No one understands me or cares about me; I have genius, and I am treated like a pariah; I have a heart, and no one to love. I am completely miserable."

"I made no reply. It was useless to dispute with Beethoven, and I let him continue in the same strain. He did not cease till we re-entered the city, and then he relapsed into a sad silence. We crossed a dark narrow street near the gate of Coblenz. All at once he stopped.

"Hush!" said he; "what is that noise?"

"I listened, and heard the faint tones of an old piano issuing from some house at a little distance. It was a plaintive melody in triple time, and notwithstanding the poverty of the instrument, the performer gave to this piece great tenderness of expression.

"Beethoven looked at me with sparkling eyes. 'It is taken from my Symphony in F,' said he; 'here is the house. Listen; how well it is played!'

"The house was small and humble, and a light glimmered through the chinks of the shutters. He stopped to listen. In the middle of the finale there was a sudden interruption, silence for a moment, then a stifled voice was heard.

"I cannot go on," said a female voice. 'I can go no farther this evening, Frederick.'

"Why, sister?"

"I scarcely know, unless it is because the composition is so beautiful that I feel incapable of doing justice to it. I am so fond of music. Oh! what would I not give to hear that piece played by some one who could do it justice."

"Ah, dear sister," said Frederick, sighing, "one must be rich to procure that enjoyment. What is the use regretting when there is no help for it? We can scarcely pay our rent; why think of things beyond our reach?"

"You are right, Frederick; and yet for a moment, when I am playing, I long once in my life to hear good music well executed. But it is useless! it is useless!"

"There was something singularly touching in the tone and repetition of the last words. Beethoven looked at me. 'Let us enter,' said he, abruptly.

"Enter!" said I; "why should we enter?"

"I will play to her," replied he, with vivacity. 'She has feeling, genius, intelligence; I will play to her, and she will appreciate me.' And before I could prevent him, his hand was on the door. It was not locked, and opened immediately. I followed him across a dark corridor, towards a half-open door to the right. He pushed it, and we found ourselves in a poor destitute room, with a little stove at one end, and some coarse furniture. A pale young man was seated at a table, working at a shoe. Near him, bending in a melancholy manner over an old piano, was a young girl. Both were cleanly, but very poorly dressed; they rose and turned towards us as we entered.

"Pardon me," said Beethoven, somewhat embarrassed, "pardon me, but I heard music, and was tempted to enter. I am a musician."

"The girl blushed, and the young man assumed a grave, almost severe manner.

"I heard also some of your words," continued my friend. 'You wish to hear—that is, you would like—in short, would you like me to play to you?'

"There was something so strange, so abrupt, so comical, in the whole affair, and something so agreeable and eccentric in the manners of him who had spoken, that the ice was broken in an instant, and all involuntarily smiled.

"Thank you," said the young shoemaker, 'but our piano is bad, and then we have no music.'

"No music!" repeated my friend; 'how then did Mademoiselle——' He stopped and coloured; for the young girl had just turned towards him, and by her sad veiled eyes he saw that she was blind.

"I—I entreat you to pardon me," stammered he; 'but I did not remark at first. You play then from memory?'

"Entirely."

"And where have you heard this music before?"

"I heard a lady who was our neighbour at Bruhl two years ago. During the summer evenings her window was always open, and I walked before her house to hear her."

"And you have never heard any other music?"

"Never, excepting the music in the streets."

"She seemed frightened; so Beethoven did not add another word, but quietly seated himself at the instrument, and commenced to play. He had not touched many notes when I guessed what would follow, and how sublime he would be that evening, and I was not deceived. Never, never during the many years I knew him, did I hear him play as on this day for the young blind girl and her brother. Never did I hear such energy, such passionate tenderness, such gradations of melody and modulation. From the moment his fingers commenced to move over the piano, the tones of the instrument seemed to soften and become more equal.

"We remained sitting, listening to him breathlessly. The brother and sister were dumb with astonishment, as if paralysed. The former had laid aside his work; the latter, her head slightly inclined, had approached the instrument, her two hands were clasped on her breast, as if she feared the beating of her heart might interrupt those accents of magic sweetness. It seemed as if we were the subjects of a strange dream, and our only fear was to wake too soon.

"Suddenly the flame of the solitary candle flickered, the wick, consumed to the end, fell, and was extinguished. Beethoven stopped; I opened the shutters to let in the rays of the moon. It became almost as light as before in the room, and the radiance fell more strongly on the musician and the instrument.

"But this incident seemed to have broken the chain of Beethoven's ideas. His head dropped on his breast, his hands rested on his knees, he appeared plunged into a profound meditation.

"He remained so for some time. At last the young shoemaker rose, approached him, and said, in a low respectful voice, 'Wonderful man, who are you, then?'

"Beethoven raised his head, and looked at him abstractedly, as if he had not comprehended the meaning of his words.

"The young man repeated the question.
 "The composer smiled as only he could smile, with sweetness and kingly benevolence.

"Listen," said he. And he played the first movement in the F Symphony. A cry of joy escaped from the lips of the brother and sister. They recognised him, and cried with emotion, 'You are then Beethoven.'

"He rose to go, but our entreaties succeeded in detaining him.

"Play to us once more, just once more."

"He allowed himself to be led to the instrument. The brilliant rays of the moon entered the curtainless window, and lighted up his expansive earnest forehead.

"I am going to improvise a sonata to the moonlight," said he playfully. He contemplated for some minutes the sky sprinkled with stars; then his fingers rested on the piano, and he commenced to play in a low, sad, but wondrously sweet strain. The harmony issued from the instrument, sweet and even as the rays of the moon spread over the shadows on the ground. This delicious overture was followed by a piece in triple time, lively, light, capricious, a sort of intermediate burlesque, like a dance of fairies at midnight on the grass. Then came a rapid *agitato finale*—a breathless movement, trembling, hurrying, describing flight and uncertainty, inspiring vague and instinctive terror, which bore us onwards on its shuddering wings, and left us at last quite agitated with surprise and moved to tears.

"Adieu," said Beethoven, abruptly pushing back his chair and advancing to the door—"Adieu."

"You will come again?" asked both at the same time.

"He stopped, and regarded the young blind girl with an air of compassion.

"Yes, yes," said he hurriedly, 'I will come again, and give some lessons to Mademoiselle. Farewell, I will soon come again.'

"They followed us to the door in silence more expressive than words, and remained standing on the threshold till we were out of sight.

"Let us hasten home," said Beethoven to me in the street. 'Let us hasten, that I may note down this sonata while it is in my memory.'

"He entered his room, and he wrote till nearly daybreak."

I still sat in a listening attitude after the old musician had finished speaking. "And did Beethoven give lessons afterwards to the blind girl?" asked I at length. He smiled, and shook his head sadly. "Beethoven never entered that humble house again. With the excitement of the moment, his interest in the blind girl also passed away; and though the brother and sister long and patiently awaited his coming, he thought no more of them."

And is it not too often so in life?

MORE ABOUT GROUSE.

FROM the red grouse, or moor-game, we pass to the common or Scottish ptarmigan, (*Tetrao lagopus*, Penn.; *Lagopus mutus*, Selby.) The ptarmigan is much smaller in size than the red grouse, and its plumage becomes white in winter.

This species is very extensively distributed. With regard to the British islands, it is only found in the central and northern districts of Scotland, in the Hebrides, and in the Orkneys, but neither in Cumberland, North Wales, nor Ireland. It haunts the bleak rocky summits of the higher mountain ridges, feeding on alpine berries, seeds, the tender shoots of heather, and of other high mountain plants, and seldom or never descends into the lower territories of the red grouse. On the continent, it is found throughout all the great mountain ranges, even as far south as Italy, and the bold rocky district of Aragon in Spain. It is abundant throughout the vast elevated districts of Norway and Sweden, tenanted the Fjelds, or Fjalls, and is undoubtedly the Fyall-ripa, or *Lagopus Alpinus* of the Swedish naturalist Nilsson. Its range thence extends throughout the whole of Russia, and is continued over a great portion of the high northern and arctic regions of America. By the parties employed on the various northern expeditions which have been sent out from this country, says Yarrell, these birds were found at Greenland, on the west side of Baffin's Bay, in the country south of Barrow's Straits, on the east of Prince Regent's Inlet, on Melville Peninsula, and at Port Bowen; and one pair were seen on the east side of the peninsula of Boothia, while three or four more were seen at Felix harbour. It is also an inhabitant of the northern part of North America.

The common ptarmigan, unlike the red grouse, is by no means shy or wild, so that the sportsman who submits to the toil of the difficult ascent among crags and precipices may closely approach it without exciting alarm. So unwary indeed is it, that, according to Mr. Selby, the shepherds frequently knock it down with a stick. Pennant also notices the unsuspicious nature of these birds, which may be driven like poultry, and when at last urged to rise, will only take flight to a short distance.

During the breeding season, which commences early in spring, the ptarmigans are scattered in pairs over the mountain range; the female makes no nest, but deposits her eggs, varying from eight to fifteen in number, amongst rough stones; and the brood continue associated until the following spring, often conjoining with other broods so as to form "packs." During the winter, when the mountains are covered with snow, the ptarmigans burrow beneath it, not only securing thereby for themselves a snug asylum, but also the means of obtaining subsistence; for, making their "sub-snow" runs along the surface of the earth, they open thereby a feeding ground, which affords them the fruit and tender shoots of cranberries, cloudberries, and other alpine plants.

It is only in August and the early part of autumn, that the sportsman in the Scottish Highlands can contend with the difficulties to be encountered in ptarmigan shooting; and even then, the coveys, as they lie concealed amongst grey or many-tinted stones and lichen-covered fragments, or out-cropping masses and shelves of rock, to which the colour of their plumage assimilates, are not readily to be discerned, except by a practised eye. Their habits at this season are thus graphically described by Mr. Macgillivray:—"These beau-

tiful birds, while feeding, run and walk amongst the weather-beaten and lichen-crested fragments of rock, from which it is very difficult to distinguish them when they remain motionless, as they invariably do should a person be in sight. Indeed, unless you are directed to a particular spot by their strange low croaking intonations, you may pass through a flock of ptarmigans without observing a single individual, although some of them may not be ten yards distant. When squatted, however, they utter no sound, their object being to conceal themselves; and if you discover the one from which the cry has proceeded, you generally find him on the top of a stone, ready to spring off the moment you show an indication of hostility. If you throw a stone at him, he rises, utters his call, and is immediately joined by all the individuals around, which, to your surprise, if it be your first rencontre, you see spring up one by one from the bare ground. They generally fly off in a loose body, with a direct and moderately rapid flight, resembling, but lighter than, that of the red grouse, and settle on a distant part of the mountain, or betake themselves to one of the neighbouring summits, perhaps more than a mile distant."

It is not often that ptarmigans killed in Scotland are to be seen in the London markets; and when they do occur, they are (as far at least as our personal observations extend) in a transition state of plumage between that of summer and that of winter, the pure white being interrupted and diversely variegated with patches of speckled and barred grey.

One of the most remarkable facts connected with the history of the ptarmigan is, its change in colour from a spotted and streaked livery, which distinguishes it in summer, to one of snowy whiteness in winter. In spring, for example, the plumage is varied, on the upper and under surface of the body, with black, deep reddish yellow, brown, and grey, the male being much darker than the female; the quill feathers are white with black shafts, and the naked skin above the eye is bright vermillion. As autumn advances, the yellow gives place to greyish white; the black spots and bars become irregularly broken; patches of white now begin to be conspicuous, and these increase till the general plumage acquires the purity of the mountain snow. With this whiteness it also increases in fulness; the beak is buried almost to the tip in soft feathers, and the hair-like feathers with which the legs and toes are covered in summer, are now exchanged for a covering so thick and full, as to conceal even the tips of the claws, and give to the limbs a similarity to the hind legs of the hare, justifying the propriety of the term *Lagopus*, or hare-foot. As the plumage in autumn gradually changes from its mottled style to white, so in spring the change from white to the summer livery is also gradual.

We learn from Selby, that the ptarmigan has been reared in confinement without much difficulty, and has been known to breed in a tame state. With respect to the word *ptarmigan*, Mr. Yarrell rightly states that it is nothing more than a modification in letters, rather than pronunciation, of the Gaelic *tarmachan*, the name of the bird in the Scottish Highlands.

We now turn to the willow or subalpine ptarmigan; the dal-ripa of the Swedes; *Tetrao albus*, Linn.; *Lagopus albus*, Bonap.; *Lagopus saliceti*, Swainson, Gould, and authors generally; *Lagopus subalpinus*, Nilsson.

It is this species of ptarmigan which in winter crowds the markets and poulterers' shops of the metropolis. It has no black streak from the beak, surrounding the eye, but the shafts of the greater quill feathers and the outer tail feathers are black, the rest of the winter plumage being snowy white.

The willow ptarmigan, or dale grouse, like our moor-game, tenants a lower elevation than the previous species, the little Alpine ptarmigan, as it was called by Linnæus, who was well acquainted with both species. In size and general aspect it closely agrees with our moor-game; but our moor-game, even in the north of Scotland, never becomes white in winter. Granting, then, with naturalists in general, its specific distinctness, it may be stated that the willow ptarmigan is not a native of the British islands. In Norway, Sweden, and throughout northern Europe generally, it is extremely abundant, as well as in the fur countries of North America, between the 50th and 70th parallels of latitude, where, according to Dr. Richardson, it breeds in the valleys of the rocky mountains, on the barren grounds, and along the arctic coast. In winter, according to the same authority, these ptarmigans collect in flocks, and shelter themselves in thickets of willow and dwarf birches on the banks of marshes and lakes, the tops and buds of the shrubs constituting the principal part of their food at that season. Bare sandy spots are their favourite resorts in the day time; but they pass the night in holes in the snow. The spring change of plumage begins first in the male, the transmutation of colours commencing on the head and neck, so that the contrast between this part and the yet white body is not a little singular. The female does not fairly moult till the early part of June; the delay being admirably suited to her habits, and well calculated to insure her safety, as well as that of her eggs and young brood, from numerous enemies. The male puts on his coloured plumage as soon as the rocks and eminences most exposed to the sun become bare; and at this time he is accustomed to stand on a large stone, and call in a loud croaking voice to the females that hide themselves in their white dress among the unmelted snow on the more level ground. The habits of the willow ptarmigan, as observed by Dr. Richardson in the fur countries of America, are almost precisely the same as those which the writer has collected from several Norwegian friends, by whom, during the last winter, he was supplied with ptarmigans *ad libitum*, and in whose houses he has seen packages of these birds in a frozen state, heaped up in piles on the floor—presents from Norway. We may here state that in flavour, and the peculiar bitterness of the back bone, these birds could not, when dressed, be distinguished from moor-game, being, in our opinion, far superior to the small Scottish or Alpine ptarmigan.

During the last winter, 1854-5, the quantity of ptarmigans sent to the London markets from Norway and Sweden, but principally, as we were informed, from Norway, was unprecedented. Packages of these birds, in a frozen state, came in

sively from Scotland that they are received. The adult male weighs about four pounds, and the female, or grey hen, about two.

With respect to that noble bird the capercaillie or capercailzie (*Tetrao urogallus*), once a tenant of the forests of Scotland, we can here say but little. Extirpated in our island, and also in Ireland, the cock of the wood (for by this and other names it is known) still abounds in the forests of Norway, Sweden, Russia, Germany, etc. It is more woodland in its habits than the black grouse, feeding upon berries and the shoots and buds of the pine. The male equals a turkey in size, varying from eight to twelve or fourteen pounds in weight, while that of the female seldom exceeds five or six pounds.

The flesh of the capercaillie is in high esteem, and vast numbers of these birds are imported, principally from Norway, but also from Sweden, during the winter, into the London market, together with black grouse and snowy ptarmigans. They are mostly caught in traps and snares, but some are shot with a single ball. When frozen, they will keep in good condition for a very long period. The flesh of the female is much superior to that of the adult male. Both the capercaillie and the black grouse breed in confinement in an aviary, under judicious management; and in Sweden, broods are often thus reared. In Scotland, and also in England (at Knowsley), broods of capercaillie have been thus obtained from the eggs, with a view to replenish the pine-woods with this magnificent game; but what degree of success has attended the attempt we cannot positively ascertain. In Sweden the capercaillie is often kept in a half-domestic state, and becomes not only as tame as a common fowl, but displays great boldness and pugnacity of disposition. We may here observe that hybrids, or mules between the capercaillie and the black grouse, are not unfrequent both in Norway and Sweden.

THE WAY TO FIND PEACE.

NOTHING but faith in the one perfect and sufficient sacrifice will enable men to do this—to draw near to God. For all men in the deepest centre of their being feel, that what they need is something which shall enable them to look entirely away from themselves, and entirely unto some other, for the ground of their acceptance. When once the awful vision of a holy God has flashed upon his soul, never again to be put by; when once the idea of law, and of the transgression of a law, have been revealed unto him; and (which is the same thing) when once the abysmal depths of his own sinfulness have yawned beneath his feet; how idle then doth everything of his own appear for the repairing of the past, for the knitting again the bands of the broken communion with his God! His works! as well might he seek to fill a bottomless pit with pebbles thrown into it one by one, or to pay off at one end a debt with pence, which was accumulating by talents at the other.

And thus it remains with him, till he has learned the meaning of the word "sacrifice—" till he has learned to see that the ground of his peace must be, not in the doing something himself, but

in the acquiescing in something that has been done for him—till, looking unto Christ and to his one sacrifice for the putting away of sin, he is enabled to look at his own sin as an alien thing, as something separable, yea, separated from himself, no longer cleaving to him and defiling him and all that he thinks or does, but put at a distance from him; which henceforth he will contemplate, indeed, for shame and for humiliation, but which he will no longer feel to be part of his own most inmost being. And thus through faith in his sacrifice the man is put in a condition to draw nigh unto God, unto that living God who must be served in a living manner; who only can truly be served by men whose consciences are purged from dead works, who have no longer a clinging, cleaving sense of defilement; but who have, by his Son and by his offering for them, been made perfect as pertaining to the conscience. They may not, they cannot indeed, yet be perfect as pertaining to their life and work, though to that they are ever tending—that is, the glorious end which they shall one day reach, if not here, yet there. But already as pertaining to the conscience they are perfect; and so in the way of becoming perfect in all else—justified that they may be sanctified—the two lines, of the righteousness which is imputed unto them, and the holiness which they have realised, starting indeed with a wide space between them, yet ever tending to a union; and one day to meet, and to run on as one through eternity.—*Trench.*

MOTHERS CAN DO GREAT THINGS.

A CLERGYMAN, now fulfilling the duties of his office punctually, ardently, and faithfully, was asked, when examined by the bishop's chaplain, whether he had made divinity his study? He replied he had not particularly; "but," said he, "my mother taught me the Scriptures." "Ah," said the chaplain, "mothers can do great things!" The young man was examined with respect to the extent of his knowledge, was approved, ordained, and appointed to preach before the bishop.

Mothers may perceive how necessary and useful are their pious instructions, and be encouraged, while their husbands are busily engaged in providing for their families the meat that perisheth, to be diligent in bringing up their offspring in the knowledge of the Scriptures, as the mother of Timothy did. This anecdote may also lead reflecting parents to consider what ought to be the education of their daughters that they may become such mothers; for on the education of daughters depends the future welfare, not only of families, but of our country.

The excellent mother alluded to in the above anecdote wrote as follows to another of her sons, on hearing of the birth of his eldest child: "Give him an education, that his life may be useful; teach him religion, that his death may be happy!"

TO SHAKE OFF TROUBLE.—Set about doing good to somebody; put on your hat, and go and visit the poor; inquire into their wants and administer unto them; seek out the desolate and oppressed, and tell them of the consolation of religion. I have often tried this, and found it the best medicine for a heavy heart.—*Howard.*

Varieties.

SALTNESS OF THE SEA AS AFFECTING NAVIGATION.—Surprise has been expressed that vessels going direct to Sebastopol take a smaller cargo than if they were only going to Constantinople, or that they diminish their cargo in the latter port before entering the Black Sea. The reason is this—the density of the water of different seas is more or less considerable, and the vessels sailing in them sink in the water more or less, according to their density. The density arises from the quantity of salt contained in the water; and, consequently, the saltier the sea is, the less a vessel sinks in it. As, too, the more sail a vessel carries, the deeper she penetrates the water, it follows that the more salt the water the greater the quantity of sail that can be carried. Now the Black Sea being sixteen times less salt than the Mediterranean, a vessel which leaves Toulon or Marseilles for Sebastopol must take a smaller cargo than one that only goes to Constantinople, and a still smaller one if it is to enter the Sea of Azoff, which is eighteen times less salt than the Mediterranean. It is known that the Mediterranean is twice as salt as the Atlantic, once more than the Adriatic, five times more than the Caspian Sea, twelve times more than the Ionian Sea, and seventeen times more than the Sea of Marmora. The Dead Sea contains more salt than any other sea; it is asserted that two tons of its water yield 589 lbs. of salt and magnesia.—*Galignani*.

THE Wedge-tailed Eagle is the fiercest of the family, and is frequently to be met with in Australia. "James Backhouse gives an instance of a woman having been chased by one of these birds for some distance, and obliged to run to a house for shelter. He was told by the wife of a settler that she one day was struck with the action of a horse in an enclosure, galloping rapidly backwards and forwards, chased by two eagles. The horse at length fell, when one of the birds pounced on its head; she then called for the assistance of some men, who drove away the ferocious birds. In Van Diemen's Land this species not unfrequently carries off living lambs, and is, in consequence of its ravages, much dreaded by the colonists."—*White's Popular History*.

THE FIRST BOOKS IN AMERICA.—It is a remarkable fact that in a year after the first printing press was established at Cambridge, Massachusetts, or in 1640, an American book was issued from it, (being the first published in what are now the United States,) which was soon after reprinted in England, where it passed through no less than eighteen editions, the last being issued in 1751; thus maintaining a hold on English popularity for one hundred and fourteen years. This was the *Bay Psalm Book*. It passed through twenty-two editions in Scotland, where it was extensively known, the last bearing date 1759; and as it was reprinted without the compiler enjoying pecuniary benefit from its sale, we have irrefutable proof that England pirated the first American book, being in reality the original aggressor in this line. This first American work enjoyed a more lasting reputation than any volume since of American origin, having passed in all through seventy editions—a very remarkable number for the age in which it flourished. Success attended the colonial press, and in 1683 the first Bible printed in America was published at Cambridge. It was unlawful to print an English version of the Scriptures—that right being a monopoly enjoyed by privilege and patent in England. The one printed in Massachusetts was Elliott's famous Indian Bible; and, although fifteen hundred copies were struck off, they are now quite rare and "sealed books," as the tongue in which they were written is literally a "dead language," the tribe and all who had a knowledge of the dialect being long extinct. Elliott's work is unique, being at once a monument to his piety, perseverance, and learning. Its literary successor was Newman's "Concordance of the Scriptures." This was compiled by the light of pine knots in a log cabin, in one of the frontier settlements of Massachusetts. It was the first of its kind, and for more than a century was admitted to be the most perfect, holding its place in public esteem until superseded by Cruden's, which it suggested.—*Hunt's (New York) Merchant's Magazine*.

SINGULAR ARITHMETICAL FACT.—Any number of figures you wish to multiply by 5 will give the same result if divided by 2—a much quicker operation; but you must remember to annex a cipher to the answer when there is no remainder, and when there is a remainder, whatever it may be, annex a 5 to the answer. Multiply 464 by 5, and the answer will be 2320; divide the same number by 2, and you have 232, and as there is no remainder, you add a cipher. Now, take 357, and multiply by 5, the answer is 1785. On dividing this by 2, there is 178 and a remainder; you therefore place a 5 at the end of the line, and the result is again 1785.

INSTABILITY OF THE EARTH.—Not far from Naples, near Puzzuoli, there are parts of an ancient temple of the Egyptian god Serapis still standing; three beautiful columns especially speak of its former splendour. At a considerable height they present the curious sight of being worm-eaten; and recent careful researches leave no doubt that the waters of the Mediterranean once covered them so high as to bring these upper parts within reach of the sea-worms. Since then, the land has risen high; but stranger still, they are, by a mysterious force, once more to be submerged: already the floor of the temple is again covered with water; and a century hence new generations of molluscs may dwell in the same abandoned homes of their fathers, which are now beyond the reach of the highest waves. An old Capuchin monk, who lives near by, is fond of telling visitors how he himself, in his youth, had gathered grapes in the vineyards of his convent, over which now fisher-boats pass in deep water. Venice also, the venerable city of the Doges, sinks, year after year, deeper into the arms of her betrothed bride, as if to hide her shame and her disgrace in the bosom of the Adriatic. Already in 1722, when the pavement of the beautiful place of S. Marco was taken up, the workmen found, at a considerable depth below, an ancient pavement, which was then far below water-mark: now the Adriatic has again encroached upon the twice-raised square; at high-water, magazines and churches are flooded; and if proper measures are not taken in time, serious injury must inevitably follow.—*Stray Leaves from the Book of Nature*.

THE SULTAN.—We were ushered up the grand staircase of the palace, towards the large reception-room, where sovereignty was embodied in *propria persona*. This apartment is one of ample dimensions, and its numerous windows look out on the winding Baghaz. It is plainly yet neatly furnished; like Reschid Pacha's room, it is covered with a light matting, and divans form the prominent buttresses of four walls. Handsome mirrors, from ceiling to floor; wonderful clocks; a few chairs of ordinary stamp; two or three mosaic tables, and two large globes on stands, complete the rapid inventory. At one end of the room, and the centre of all eyes, sat the Sultan on a divan, which was raised by a platform. His shoulders were covered with a cloak he generally wears clasped around the neck with diamonds. He was looking better than usual, though his general appearance is not one strongly marked. He is a man of moderate stature, probably five feet six inches, and delicate frame, having a slight drooping and recession of the chin, accompanied by a laxity of the muscles of the mouth, denoting that want of firmness which is a point of his character. His hair is black, and his eyes small and languid. He possesses a strong inclination to deeds of charity, kindness, and liberality, which is diminished, if not counteracted, by a selfish and intriguing ministry.—*American Paper*.

To some men it is indispensable to be worth money, for without it they are worth nothing.

PAPER FROM THISTLES.—Galignani says that a number of persons are occupied in the neighbourhood of Sens (Yonne) in collecting thistle heads for a paper manufacturer, who uses them as a substitute for rags. The paper made from them is said to be of a superior quality, and to present a saving of 40 per cent.

TRUE greatness is not greater for the praises of men. It is what it is in spite of them.